

A high intensity discharge (HID) driver for a HID lamp which can be used as a HID ballast is provided. The HID driver at least includes an input processor connected to an input power for suppressing a transient and an in-rush current of the input power, a main driver connected to the input processor and a HID lamp for driving and amplifying the input power; and a protection circuit connected to the main driver and the HID lamp for controlling a timing of starting after a failure condition. Moreover, the HID driver can further includes a timing circuit connected to the main driver for controlling a timing, and a starting circuit connected to the timing circuit and the HID lamp for starting the HID lamp. The HID driver can be applied to a high pressure sodium (HPS) lamp or a metal halide lamp (HML).